



From Visions of Grandeur to Grand Failure

Alternative schools of descriptive decision theories to explain the Berlin Brandenburg

Geraldi, Joana; Stingl, Verena

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**From Visions of Grandeur to Grand Failure:
Alternative schools of descriptive decision theories to explain the Berlin Brandenburg
Airport fiasco**

Draft submitted to EURAM 2016

Joana Geraldi and Verena Stingl

Abstract

Berlin Brandenburg Airport exemplifies the impact of poor decisions in projects. Extant research on behavioural decision making in project contexts offers a variety of explanations for poor decisions. However, the research sheds only spotlights on the field. It could benefit from a stronger coverage of theories in cognitive and social psychology and integration of findings and concepts across theoretical traditions. Drawing on the developments of Behavioural Strategy, this paper proposes the concept of ‘Behavioural Projects’ as a host of the growing body of research on behavioural decision making in projects. We organise extant research in a conceptual framework rooted in three schools of thinking - psychological (reductionist), political (pluralist) and social (contextualist). We illustrate how the three schools and their integration provide ample research opportunities through an analysis of decisions in the Berlin Brandenburg Airport fiasco. Based on our framework, we propose a research program that serves as inspiration for future studies on the crossroads between cognitive and social psychology theories and decision situations in projects. We hope that such future research will give rise to the development of an integrated behavioural decision making theories for temporary organisations.

1. Introduction

Berlin Brandenburg Airport exemplifies the impact of poor decisions in projects. The infrastructure project has been a constant source of outrage since its originally scheduled

opening in 2011. Public media argues that the project suffered under overly ambitious plans and constant scope change. For example, the airport company initiated major changes at late stages in the project. Subcontractors could no longer keep up with the cascading effects generated by such constant changes, and even asked for a temporary suspension of construction work, which has been denied. While the current tentative opening date has been moved to 2017, projected costs have tripled to 5.4b EUR and the list of defects keeps getting longer and longer (Hammer, 2015). Why did Schwarz, the airport CEO, change the scope so frequently? Why did von Gerkan, the architect – considered among the best in Germany – accept such extravagant changes throughout project execution? Why were main contractors' concerns not listened to?

Behind the situation sketched above lies a series of poor decisions. Behavioural decision making and its applications to organizational contexts offer a variety of explanations to such challenges. As one would expect, there has been a tradition of studies of decisions and behaviours in decisions in project contexts, such as works around escalation of commitment, optimism bias, recognition of early warning signs, etc. In a comprehensive literature review on project management, Söderlund proposes decision school as one of the seven schools in project management research (Söderlund, 2011). Some of this body of research, most notably Flyvbjerg's work, has not only informed project management practice and theory but also influenced the literature on behavioural decision making itself.

However, although decisions mark the development of each and every project, from sanction to hand-over, and are a fundamental task of every project manager and steering committee, past studies in the area were limited in number. This is now changing. In recent years, the number of articles in the field is increasing fast, and they have turned into a significant body of research that warrants a review. In a structured literature review within the International Journal of Project Management and Project Management Journal (Stingl and

Geraldi, Work in Progress), we identified 58 articles in total focusing on behavioural decision making in projects, and 39 of them were after 2010.

However, our literature review suggests that the extant research has three gaps. First, it remains focused on restricted types of decision problems and explanation theories. Taken together, the studies still did not exhaust the varying relevant theories proposed in the general literature on behavioural decision making, and hence the field has plenty of opportunities for future research. Second, although studies acknowledge one another at least within the field of projects, they consider different explanation for decision behaviour side by side rather than developing integrated frameworks that suggest how different factors reinforce one another. Such approach can potentially foster middle range theorising which can contribute both to the theory and practice of projects, and behavioural decision making theories. Finally, there is an opportunity to improve theoretical grounding on the classic, extensive and solid literature on behavioural decision making, as well as the emerging literature and new methodologies using for example neural science (Powell, 2011).

Inspired by Behavioural Strategy, we propose the concept of ‘Behavioural Project’, as a host and umbrella term for research on behaviours in decisions in projects. We will argue that this emerging body of research addresses the question: how can the application of cognitive and social psychology to decisions in projects help the understanding of key project challenges and successes? In addressing this question, we will contribute to a stronger grounding of the managing of project in realistic assumptions about human cognition, emotion, and social interaction.

This article will portray the current state of this emerging area of research in projects and propose a theoretical framework to organise and inspire research on behavioural decision making in projects, and by this means, address the three gaps identified above. In line with arguments proposed by Knudsen (2003) in Organisation Theory and Söderlund (2011) in

project management, we suggest that research in behavioural decisions in projects will benefit from a balance between work focused on a variety of theoretical traditions, integrating empirical and theoretical studies into broader frameworks that will inform practice, and theorising on decisions in temporary organisations.

The article is structured as follows: First, we will introduce the proposed concept of Behavioural Project, and suggest a framework by linking it to three schools of Behavioural Strategy to decisions in projects and its related emerging literature. We then will illustrate the application of the Behavioural Project framework through discussion of decision behaviour in the Berlin Brandenburg Airport case. We conclude with reflections on implications to research and a suggested research agenda.

2. Behavioural Project

The extant research on what we call Behavioural Project has been insightful to help us understand some of the most intriguing and problematic behaviours in projects such as escalation of commitment and failure to terminate projects. As the number of contributions to the field is growing, it also becomes more heterogeneous and fragmented and could, therefore, benefit from stronger understanding of its differences and potential for integration.

Building on the literature on Behavioural Strategy, we propose a coherent conceptual framework to organize empirical and theoretical observations so researchers in the field can make sense of the field's boundaries, assumptions, major findings, challenges, potential future research (Shapira, 2011), within and across areas established in the framework. Indeed, we can only connect what we are consciously aware of.

We develop the conceptual framework for 'Behavioural Projects' based on the application of three theoretical schools from the Behavioural Strategy proposed by Powell et al (2011) to the context of projects in general and to behavioural decision making in projects

in particular. The latter is developed by applying the three schools to the three types of project decisions as suggested by Rolstådas and Pinto (2015).

The framework helps researchers to understand the differences and similarities across the research domains, and identify specific gaps within each domain. As we structure the research across specific schools with solid theoretical traditions, we encourage careful grounding of research on the classic and emerging research on cognitive and social psychology in general and that applied to organizational contexts in particular. Finally, the framework can also counteract fragmentation by encouraging integration of knowledge across different schools to improve our understanding of the complex context of project decisions.

In the next paragraphs we will explore the schools of behavioural strategy and types of decision, and connect them into our conceptual framework.

Behavioural Strategy offers a solid starting point for the application of cognitive and social psychology to project contexts. Behavioural Strategy is an umbrella term proposed by Powell et al. (2011) to host research in the field of Strategy that draws on insights of social and cognitive psychology. Cognitive and social psychology have a long-lasting tradition in organization theory and strategy research. However, despite 30 years of development, the area lacks integration and is detached from general concerns of strategy. In 2011 Powell et al. called for the re-emergence of works in the area, which are more integrated, with stronger focus on pertinent concerns in strategy research and draws more strongly on cutting edge studies on psychology and behavioural economics.

In comparison with Strategy, research on cognitive and social psychology in project context is limited, however, as with strategy, studies in the area are fragmented and focused on only some of pertinent concerns in project research and practice. Research in project also fails to draw on the cutting edge psychology research theories and methodologies, and rather recently (with exceptions) embraced classic methodologies such as experimentation. Some

studies display also weaknesses in terms of their grounding in the classic and solid foundations of cognitive and social psychology. Thus, akin to Behavioural Strategy, 'Behaviour Project' can act as a host of research in cognitive and social psychology in projects, as well as encourage research with stronger embeddedness and understanding of the traditions and emerging trends in psychology research.

In order to do so, it is useful to be more explicit as to the different traditions in cognitive and social psychology, and their applications into organizational contexts. That is where Powell et al.'s (2011) three schools of Behavioural Strategy are useful. Powell et al organize current and guide future research across three schools: Reductionist, Pluralist and Contextualist. We apply these three schools as three alternative but not competing views of behavioural decision making in projects, with different research traditions, assumptions and perspectives on decisions. Making them explicit assists a more careful study and integration of findings. In the next paragraphs we will describe the different schools in general and in projects.

The **Reductionist School** is based on a positivist epistemology and on the works of Kahneman, Tversky, Slovic and Lovallo, and explores concepts like optimism bias and planning fallacy (Lovallo and Kahneman, 2003), prospect theory (Kahneman and Tversky, 1979) or illusion of control (Slovic, 1987). A 'good' project decision in the reductionist's view is a strictly rational decision that optimizes the (subjective) utility for the future scenario. However, reductionist do not assume rational behaviour in 'real life'. They take into account that utility theory is based on the assumption of complete information and certainty, which cannot be reached in real-life project. Deviation between the normative and the descriptive theories are identified as errors or biases. Reductionist research is concerned with identifying the roots of irrational decision behaviour and offers "de-biasing methods" such as taking the outside-view (Lovallo and Kahneman, 2003), reference class forecasting

(Flyvbjerg, 2008), introduction of a devil's advocate and others to increase the match between the subjective perception of the decision maker with the assumed objective reality.

Opposed to the paradigmatic development in the Reductionist School, the **Pluralist School** draws on a variety of theoretical traditions and research methodologies, including works on political science, organization theory, and social cognition psychology. Bounded rationality of decision makers is less of an interest to pluralists. It instead assumes that different stakeholders are likely to hold different opinions and have partly conflicting interests. From this perspective, decision makers focus on the rational and deliberate pursuit of one's own interests, and the negotiation of interests across different groups. Decisions become, henceforth, arenas for negotiation and bargaining. As a response, the pluralist school is concerned with power and moral hazards, that can emerge from asymmetric information between parties, and focuses on the overall decision environment of organizations, including issues such as intergroup bargaining, politics, conflict resolution, or resource allocation.

Pluralists do not subscribe to the image or ideal of a structured decision making process advocated by normative school. They accept that making decisions involves e.g. bargaining, discussions behind closed doors, give and take, and that such behaviour cannot follow a structured, step by step model. A 'good decision' and decision process cannot be prescribed *per se* and will involve a discussion on 'good to whom?'. However, not everything goes. Pluralists suggestions to practice involve methods and practices to improve fairness and promote ethical behaviour.

Finally, the **Contextualist School** sees decision as intrinsically connected with its context, organizational culture, narratives, etc. The school hosts studies with qualitative methodologies and mostly a socially constructed view of reality. According to this school, decisions are not made in a meeting, but what happens in a meeting is the consequence of broader sensemaking processes, where attention, priority, dominant narratives are established

and shape any ‘decision’ in organizations. As for the Pluralist School, stakeholders in organizations (and projects) are seen to have different, and partly conflicting interests, experiences and opinions, resulting from different mental frames and ‘constructions of reality’.

The Contextualist School is interested to understand the processes of convergence of these diverging opinions into a ‘dominant’ narrative, which will then become the ‘decision’. In this regard, a ‘good decision’ is one that eventually converges, and that stakeholders, by and large, are in line with, and accept. Decision makers are therefore not seen as a person with authority to make decision but an orchestrator of narratives and meaning, aspiring for ‘convergence’ of meaning, although accepting that there will never be a single narrative across the project. And that is not necessarily negative, as long as the narratives are similar enough to instigate coordinated action.

Table 1 provides an overview of the three schools of Behavioural Strategy applied to project context, and hence constituting the basis for what we called Behaviour Projects.

Table 1: Emerging Research Program on ‘Behavioural Project’

	Reductionist	Pluralist	Contextualist
Weltanschauung in relation to decisions	Decisions are aspired to be rational, and deviations from rationality should be mitigated.	Decisions are negotiation arenas, prone for conflict of interests, bargaining and opportunistic behaviour.	Decisions are sensemaking processes. Decision processes are intertwined in negotiation of meaning, culture and narratives constructed before, during and even after the project.
Assumptions about decision maker's behaviour	Decision makers (or groups of decision makers) make decisions consciously as 'events' but are bounded-rational, and hence cognitively limited.	Decision makers are rational and strongly influenced by personal and political interests, which can be in conflict with that of the project.	Decision makers do not 'make' decisions, but are actors constructing narratives which will shape processes of attention, prioritisation and ultimately decisions.

Core processes of interest	Individual and intragroup decision making	Intergroup bargaining, problem solving, politics, conflict resolution, organizational learning, resource allocation	Sensemaking, perception, enactment, action generation
Caricature of project actors portrayed in research findings	The optimist: project actors suffer from ludicrous optimism bias	The opportunist: project actors have their own interests at heart	The orchestrator: project actors surf on waves of meaning, in an highly ambiguous world
Key generic concepts in social and cognitive psychology	Cognitive biases; heuristics; bounded rationality; subjective utility/probability; personality types, groupthink	conflict culture; decision process (inclusion/participation); intra-project communication; negotiations/bargaining; game theory	Culture (Hofstede model), language, signs & symbols, values, taboos, sensemaking, storytelling, future perfect strategising
Examples of topics and contributions in projects	Optimism bias (Flyvbjerg), sustained false optimism bias (Kutsch et al 2011), overconfidence (Gerald and Arlt, 2015), self-efficacy (Jani 2008, 2011), intuition and pattern recognition (Hartman 2008; Leybourne 2006), thinking style (Tullett 1996), personality types (Cohen, 2013), perception filters (Van Oorschot et al 2013)	Strategic misrepresentation (Flyvbjerg), dysfunctional corporate culture (Chapman et al 2006), strategic rent seeking behaviour (Sanderson 2012), suspension of believe (Kutsch and Hall 2010), political filters of evidence (Haji-Kazemi et al 2015)	Future perfect (Pitsis et al 2003), taboos (Kutsch and Hall 2010), untopicability (Kutsch and Hall 2010), stakeholder's involvement (Shapira et al 1994), project sensemaking and turnaround (Musca et al 2014), culture (de Camprieux et al 2007), framing of decisions (Ojiako et al 2014)
Typical methodologies	Positivist research, marked by experimental research, modelling and simulation	Critical realist, socio constructivist, marked by qualitative and multi-method tradition.	Socio constructivist, marked by qualitative, in-depth studies, ethnography, grounded theorising.
Examples of classic contributors	Edwards, Simon, Von Neumann-Morgenstern, Tversky-Kahneman, Schelling, Bazerman, Loewenstein, Lovallo	March, Cyert, Simon, Fiske-Taylor, Bower, Miller, Kets de Vries, Hambrick, Levinthal, Denrell, Bromiley, Rumelt, Winter	Weick, Starbuck, Pettigrew, Brunsson, March, Staw, Mintzberg, Abrahamson, Reger, Huff, Fiol, Milliken, Hodgkinson, Bettis, Mitroff

Source: Based on Powell et al (2011, p. 1372) populated with examples of articles from a structured literature review on decisions in projects (Stingl and Gerald, Work in Progress)

Our next step in the development of framework to organize and guide research on behavioural decision making in projects is the explicit application of the different schools to specific decision making situations and challenges in projects.

While decisions in projects may vary greatly with regard to scope, impact, level of documentation and formalization, involvement of stakeholders and others, Rolstadås, Pinto et al. (2015) have proposed a simple framework¹ that categorize decisions in projects into three types: selection, authorization, and plan decisions. The framework is helpful to contextualize the theoretical ideas discussed above to *decisions* in projects.

Authorization decisions are either/or decisions, typically yes/no, go/no-go, carry on/terminate decisions. These decisions should ideally consider whether the proposed option (the "yes", "go" or "termination") is beneficial for different stakeholders, the organizations involved and/or the project as a whole. The decision problem is therefore centred around the prospective outcomes of the proposed course of action. Behavioural, cognitive, social and cultural factors may affect the perception of the future with regard to e.g. uncertainty, cause and effect between action and outcome as well as the perception of potential utility, and to whom, with which consequences to dominant discourses and power relations.

Selection decisions describe the choice between a set of alternatives and are concerned with which alternative(s) provide the best utility to stakeholder's, the project's or organisations' goals. As such, selection decisions involve the consideration of a broader range of factors than in authorisation decisions. To understand selection decisions we need to explore how decision makers develop, compare and prioritize options. Actors involved in such decisions are therefore also pondering what information to use, what objectives are considered, who would benefit from such alternatives, how to bring alternatives to the pool of options, how to discredit options.

¹ At first sight, one might argue that concepts from Rolstadås are inappropriate to apply concepts of behavioral decision theories to projects. Rolstadås and colleagues suggest a decision making approach - the 'project decision chain' that is in line with descriptive decision theories. Its motivation is to counteract the seemingly unstructured and poorly documented decision processes in projects by introducing a structured and fact-based approach to decisions. Such structured view on decisions would be at odds with pluralist and contextualist schools. However, although the method itself has a strong bias towards descriptive theories, the typology is generic and not as much coloured by its roots. Instead, they are interesting to recognise different dynamics and potential behaviors were the decision framed as an authorisation, selection or plan decisions.

Finally, **plan decisions**, while at the core similar to authorization decisions, consider decisions to establish what to do, how and when. Therefore this decision involves an evaluation of whether the plan (or change in plan) is feasible, and what should be changed or reconsidered in order to increase feasibility. The decision is characterized by ambiguity, technical knowledge and information asymmetry. As plans will constantly change and need to be readapted to emerging situations in the projects (Dvir and Lechler, 2004), this type of decision also involves the development of a governance structure and mechanism of control that will maintain an oversight of the project across its life cycle.

Table 2: Overview of different types of decisions

Type	Core question	Illustration of common decision challenge	Core preoccupation of decision makers
Authorization decision	Are the expected outcomes of the proposed course of action beneficial/ desirable? (To whom?)	Project termination: failure to terminate failing projects, leading to excessive costs and reputational damage, among others	<ul style="list-style-type: none"> perceived expected outcomes weighing of gains/losses
Selection decision	Which option does provide the best result (and to whom, why)?	Technology selection: failure to select appropriate technology for the specific situation	<ul style="list-style-type: none"> formal and perceived priorities, objectives and interests at play perceived outcome of actions/ decisions subjective utility of expected outcomes
Plan decision	Is the (planning) framework suitable to attain the desired objectives? Does it provide appropriate governance and control?	Endorsement of project plan: bottlenecks in resource availability are not considered, cost and duration are underestimated, prospective benefits are overestimated	<ul style="list-style-type: none"> objectives expectation of future challenges effectivity of available tools on maintaining course (cause-effect considerations)

Table 3 combines the schools of Behaviour Projects to the specific decision types, and suggests how schools provide alternative but not necessarily competing perspectives on specific decision situations.

Table 3: Application of Behavioural Project Schools to Decision Types

Decision Type	Reductionist	Pluralist	Contextualist
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Authorisation Decision	Cognitive limitations impairs decision makers' ability to develop accurate estimations, understand interdependencies and evaluate the project or change order, leading to biased estimations and perceptions of current status, future prospects, gains vs. losses.	Decision makers are cognisant and potentially rational, but their decision to e.g. sanction or terminate a project is highly influenced by own interests and objectives. Accurate information may be omitted deliberately due to political interests.	Evaluation of project's prospect (or e.g. change order) is the result of a complex organizational sensemaking process, where dominant narrative comes to surface, or actors are unable to reach an agreement (convergence of different ways of understanding the situation) and adjourn. Dominant narrative can serve different interests and can be perceived by some as detrimental.
Selection Decision	Decision maker's limited cognition hampers comparison between different options and their potential combinations. Thereby, relevant criteria or options may be disregarded, or wrongly evaluated.	The decision maker (or the individual providing critical information) defends options that would best serve one's own interests and deliberately identify and promote evidences supporting their views, and demerits that opposing it. Options for evaluation are not developed as a result of problem, but solutions endorsed by different organizational actors look for problems, and surface when they find opportunities to do so.	Potential alternatives are developed in line with what could be developed through the current organizational language and which have potential to be accepted, thereby other options might be overlooked. Project managers and other relevant stakeholders will shape narratives to develop options that are more acceptable to the project, i.e. a success narrative to avoid project termination.
Plan Decision	The decision maker has a biased perception on the effectiveness of plan and prospective future (uncertainty, controllability of risks,...), and does not perceive the requirements for suitable plans/ governance structure.	The decision maker is aware of the general shortfalls of the proposed plan but perceives personal advantage in the execution of the proposed plan. Information providers deliberately hold back on shortfalls of the proposed plan.	Different (groups of) actors have different understandings of project goals and potential paths to 'get there'. The feasibility of a proposed plan is highly dependent on the actor's perceptions, and project managers and decision makers will attempt to create a convergence between different understandings and 'approve' an 'acceptable' plan.

3. Case Illustration

We will examine the case of Berlin Brandenburg Airport to illustrate the explanatory power of 'Behavioural Projects' schools and their application to decisions. The case has received strong media coverage, especially since the indefinitely postponed inauguration in 2012.

Berlin Brandenburg International (BBI) is an airport under construction, intended to serve as sole commercial airport for Germany's capital Berlin and replacing the two existing airports Tegel and Schönefeld. While ideas for a single airport had been floating around since the early nineties, following Germany's reunification, the actual project initiation was based on the decision of the Berlin Parliament in 2004 to develop the new airport on an area adjacent to Schönefeld Airport. The project plan published in 2006 proposed a budget of 2.83 bEUR and an opening date in October 2011. Both the planning and construction phases faced a series of major changes, partly due to alterations in EU safety regulation, and partly due to changes in the vision for the finalized airport introduced by both the airport company and Berlin politicians. These scope changes included i.a. a considerable increase in estimations of future passengers, which led to an increase in the size of the airport, addition of terminals suitable for the particularly large Airbus A380, and the inclusion of a mall-like shopping area. Several of these changes have been introduced only at very late planning stages in project.

The opening date was firstly rescheduled in late 2010 to May 2012. Just days before the newly scheduled opening, it was further postponed due to major deficiencies in the fire alarm system, that resulted in a withheld licence to operate. Since then, the opening date has been postponed several times with no definitive date currently scheduled. Furthermore both excessive cost overruns - the current cost estimate is at 5.4 bEUR -, and significant technical issues and construction failures became public. As a consequence of the apparent failures during the planning and construction phase, linked in the public perception with poor construction planning, management, execution and corruption, both the general manager of the airport company, Rainer Schwarz, and the main planning bureau *gmp* were dismissed in 2013 (a series of further dismissals followed).

An investigation committee (Abgeordnetenhaus Berlin, 2012) has been established by the Berlin Parliament in 2012. While they have not yet finished their investigations on the 78

plus 11 questions (an amendment with additional questions has been issued in 2014) regarding causes, consequences and responsibilities for cost overrun and delays of the still ongoing project, details of their findings during public committee meeting have been published in national German media. We based our analysis on those publicly available information.

We analyse the case from three angles represented in the different schools of Behavioural Project: reductionist, pluralist and contextualist. We will justify the propositions through theoretical arguments and propose approaches to research the relevance of the theories for the observed behaviour. As information about the project is limited and access to raw data like e-mail communication is not available, the analysis is based on the few available cues and complemented by behavioural decision making theories. Our analysis is not more than conjunctions on what could have influenced the project's poor project results. The objective of the analysis is illustrate differences and similarities across the three schools, and not to argue on the 'real' reasons for airport's poor project results.

Throughout the project we can observe all three decision types, as it would be expected in any project. We have chosen to focus our illustrative example on the authorization decisions, because they were especially relevant on the level of the supervisory board where a series of changes in scope were authorized, that are now partly the focus of the investigation committee.

For the illustration of the cases, we will focus on the authorization decisions, because they expressed particularly destructive force when they were related to (the constant) change of scope. We will consider only those changes that were triggered internally and not through external safety regulation. The architect, von Gerkan, reported on this topic later "The clients were tripping over each other with requests for changes" (Hammer, 2015)

According to the investigations, the increasing number of authorizations for change of scope eventually was a key contributor to high cost overruns and the technical chaos that is responsible for the ongoing delay of the opening. Retrospective analysis of these change authorizations indicate a potential insufficient regard to risks, cascading effects across different areas of the project, and the related impacts on costs and schedules appropriately into account. How do the different schools explain this increasing number of changes?

A reductionist view would focus on understanding the cognitive biases of the key actors on the client and contractor side. A likely reductionist explanation is optimism bias. Optimism bias is a general term for a subset of various cognitive biases like self-efficacy theory (Whyte et al., 1997), illusion of control (Slovic, 1976), self-efficacy (Kutsch et al., 2011), and others. In the project context, optimism bias is relevant as a potential source for biased forecasts (Flyvbjerg, 2013), either through overestimation of benefits, underestimation of costs, or underestimation of risks. As such, it may influence authorization decisions through biased provision of information or an distorted cognitive perception of available information.

In this regard, optimism bias attributes the failure in the authorisation decision to overly optimistic analysis of what would be required to execute the endorsed change, and the related risks, cascading effects across different areas of the project, and impact on costs and schedules.

One key driver for optimism bias identified in the literature is high perceived self-efficacy. Self-efficacy is a type of self-evaluation describing the individual's perceived ability to perform tasks in a way that will result in a satisfactory outcome (Bandura, 1978). In this case, the mistake in considering consequences of changes is related to decision makers' believe that, although other people would have difficulties in implementing the changes within the constraints of the project, they would be better and quicker at the job, and hence,

succeed. Literature links high perceived self-efficacy with mastery experience, i.e. a successful track record (Bandura, 1986, 1997, 2002 - as cited in Steyn and Mynhardt, 2008), observation of other people's success (vicarious experience) and external re-enforcement such as verbal persuasion (Bandura 1997).

The main actors on both the client's and the contractors side, CEO Schwarz and architect von Gerkan, were at the time of their appointment considered amongst the best within their field. Rainer Schwarz, also honorary professor for air traffic, was frequently labeled "air traffic expert", especially in the company's external communication (Airliners.de, 2010). Before accepting the position as CEO of BBI he has managed the German Airports Nürnberg and Düsseldorf, the latter one in a similar position. The expansion of his contract until 2016 in 2010 is arguably an additional external persuasion regarding his abilities and skills. We may argue therefore that the level of mastery experience as well as the external verbal persuasion of his abilities has been significant, inferring an increased likelihood of high perceived self-efficacy.

Similar assumptions can be made for his counterpart, architect von Gerkan, owner of the architectural bureau *Gmp* that had the technical lead for the planning of the airport. Van Gerkan was and is one of Germany's most renowned architects and has built his career on large and - mostly - successful infrastructure projects like the "other" Berlin Airport, Tegel, at the beginning of his career, or the award winning Terminal 1 of Stuttgart Airport. Hence, similar to Schwarz, van Gerkan exhibits high level of mastery experience and external verbal persuasion (e.g. awards), which is likely to lead to an elevated perceived self-efficacy.

As Jani has shown in two experimental studies (2008 and 2011) high perceived task specific self-efficacy is correlated with an optimistic distortion of risk perception, leading to an underestimation of risks in (failing) projects. This means that the self-perceived ability to successfully complete a task distorts the objective estimation of the project or task to fail.

Similar inferences were made by Sengupta (2008) who named this phenomenon "experience trap". Hence our proposition is, that the likely high level of self-efficacy of the key actors may have served as an amplifier for an optimism bias when evaluating the authorized changes.

If this proposition holds true, then de-biasing methods like 'taking the outside view', proposed by Flyvbjerg (2008) based on Lovallo and Kahneman (2003) would provide a sensible measure to reduce the bias and thereby improve the decisions.

Another possible factor driving optimism bias is outcome desirability, also known as "wishful thinking". While the hypothesized direct impact of a particularly desirable outcome on the estimation of probabilities has not been fully substantiated through studies, especially in face of potential losses in case of the undesired outcome (Krizan and Windschitl, 2007), Windschitl and colleagues have found indication, that desired outcomes alter the way actors seek and accept new information (2013). This is in line with another cognitive bias typically considered in the generic literature: confirmation bias (Wason, 1960). Other than the selective information seeking behaviour to confirm only the desirable outcome, as described by Windschitl et al., confirmation bias looks at the information seeking confirmation of a previously reached conviction. Although implications for the project are apparent, little research has been performed in that context so far. Therefore the extent to which this information seeking behaviour is further biased in a complex project environment vs. the controlled laboratory environment of e.g. Windschitl's studies has not been fully explored. However the generic literature suggests that a desirable outcome will alter the way actors and decision makers search for information and consider this information in their judgement. As such the desirability bias may increase the decision maker's tendency to check for optimistic information and thereby may increase the likelihood of more optimistic judgments and decisions.

Many of the later introduced changes that were not a consequence of EU safety regulations were directly linked to increasing the airport's unique features, therefore its prestige and consequently the prestige of the actors leading it to a success. For each of the key actors, both CEO Schwarz and architect von Gerkan, but also Berlin Mayor Klaus Wowereit, a successful completion of an airport, that was perceived as surpassing in size, technology and design any other German airport, would arguably have led to an increase in prestige and provided abundant future economic and career opportunities. As such, it is likely that a successful completion of an exceptional airport - e.g. bigger than Frankfurt and designed to accommodate even the gigantic Airbus A380 (Hammer, 2015) - may have served as a highly desirable outcome also on the individual levels of the actors.

Based on the generic literature we can therefore make the following proposition: A likely high outcome desirability may have led to a biased information seeking behaviour that may have been skewed towards success confirming information. Such selective attention could potentially have influenced their perceptions of the project, and let them focus on evidence confirming the feasibility of the changes and disconfirming potential issues with the project's progress.

A third exemplary factor typically associated in the generic and project specific literature with increased optimism bias is 'illusion of control' (Slovic, 1976). Individuals under the illusion of control perceive a reduced level of risk for activities and alternatives that they feel 'in control of' versus an increased dread - and thus overestimation - of risks that are perceived as out of the own sphere of control. Jani has found in simulation experiences (2008 and 2011) that there is strong evidence for illusion of control in the project context, where exogenous risks (out of the actor's control) were in general perceived significantly higher than endogenous risks (within control).

In the case of the authorisation of scope changes, the core risks - especially those that later on materialized - were mostly of endogenous nature. Subsequent problems with the fire alarm system, that ultimately were the reason for the indefinite delay of the opening, were linked to insufficient detail planning and deficiencies in execution (RBB, 2015). All of those issues are concerns of project management and are not linked to external risks and uncertainties. Given the theoretical findings linking endogenous risks to a likely decreased perception of risks and consequently an over-optimistic forecast for the considered choice we may make the proposition that in the Berlin Brandenburg case there was an increased likelihood of illusion of control and thereby biased perception of the risks, costs and expected implementation time for the authorized changes in scope.

We have argued that it is likely to find typical drivers for optimism bias - particularly, but not exclusively: high self-efficacy, high outcome desirability, and illusion of control - in the Berlin Brandenburg case. This leads to the overall proposition that the evaluation and ultimately decision to authorise the unfeasible scope changes suffered from optimism bias.

Further reductionist theories that provide a theoretical explanation for the decision behaviour during the authorization of the changes may be based on Simon's concept of bounded rationality (1976). Given the complexity of the project and the apparent lack of full change documentation in later planning stages (RBB, 2015) it can be argued that the decision makers - and also the involved architects and planning engineers who did accept those changes - might not have been able to establish a comprehensive cause-effect modeling for the impacts of the individual changes. Additionally the dynamic nature of the introduction of the changes further added to the complexity of the project. In consequence, we may make the proposition that due to the actor's bounded rationality and the dynamic complexity of the project, they failed to correctly perceive the associated risks that were introduced through the changes.

While the reductionist school maintains a neutral view on the morality of the actors in the decision context, analyzing only possible non-deliberate biases in information provision and judgement, the pluralistic school searches for evidence of political or rent-seeking behaviour of the individual actors in the decision context. As such it assumes motivation to deliberately bias information and decide following individual objectives, rather than the project's or organization's goals. As those explanations are closely linked with attribution of vested interests and possibly unethical behaviour, an analysis of the media coverage has to be performed with extreme caution, as finger pointing has become abundant when the actual scale of the cost overrun and delay became apparent. Considering the strong tendency towards scapegoating in the project over the past years - all key actors of the project execution team have been replaced and the now insolvent construction company Imtech had absorbed a large amount of, likely appropriate, blame (Fuchs et al., 2015) - the available indication for pluralistic behaviour of the actors covered in the media is considered unreliable. An in-depth analysis may be possible in the future, after the investigation committee has finalized their report (which will not be likely before the finalization of the airport). Therefore we will make the case based on purely theoretical concepts allowing for an explanation of the behaviour during the authorization of the changes.

The pluralistic angle generally assumes that the decision maker - or information provider - exploits heterogeneity in information distribution for his or her rent-seeking behaviour (Sanderson, 2012). This school thereby follows two main descriptive behavioural theories that apply to the context of authorization decisions: strategic misrepresentation of information (Flyvbjerg 2013, Flyvbjerg et al., 2009), i.e. the deliberate omission or biasing of information provided to the authorization body, and deliberate ignorance of information through the authorization body (Kutsch and Hall, 2010). Research has had a focus rather on the effects of these behaviours rather than the roots, which briefly can be characterized as

conflicts of interests between the actors' and the project's objectives, leading to politicking, bargaining or other modes of conflict resolution (Powell, Fox and Lovallo, 2011) .

An analysis of the questions addressed by the investigation committee (Abgeordnetenhaus berlin, 2012) indicates, that the Berlin Parliament was working on the assumption of the existence of at least a certain degree of opportunistic behaviour, when it was appointing the committee. Amongst other issues, the assignment focusses on the assessment of information quality and availability when presented to higher instances of authority. Some related questions are e.g. B.3. (*“In which manner and to which extend where the [...] deputies [of the authorities] informed about the current status [...], necessary changes and prospective costs? Where there phases in which there were changes to the [...] procedure, leading to enhanced or reduced information flow?”*) or E.14. (*“When did the management [...] identify that the costs [...] exceed [...] 2.4 billion Euro [...]? When and how detailed was the supervisory board and the shareholders informed about the prospective additional costs? [...]”*)

Next to the analysis of the quality and availability of the information, the committee is furthermore assigned to analyse the possibility of opportunistic interests of the actual decision makers linked with conflicts of interests (e.g. questions B.8 and B.9).

There is indication that concerns regarding the feasibility of at least some of the changes were floating around already during the planning stage and even more so during changes introduced during the implementation stage. Architect von Gerkan later stated that his bureau has not sufficiently made a stand against the recurring episodes of confusion and standstill resulting from these changes. He characterized this lack of opposition as “by far our biggest mistake” (DPA, 2014). The pluralistic angle therefore needs to raise the question, why no one spoke up. Several concepts may be considered for explanation, for instance taboo (Kutsch and Hall, 2010), groupthink (Janis, 1982) or voice behaviour (Morrison, 2011). The

consideration of voice behaviour, that is the articulation of concerns, suggestions, or critique in the intent of improvement as extra-role behaviour, is especially interesting as it has not been linked to purely politically motivated behaviour but also to roots in contextual and cognitive processes (Ekrot et al, 2015).

A review of the contextualist school's potential analysis of the decision is fundamentally different from the previous two sections, as it is not rooted in the assumption of a right versus wrong decision. While it is vain to discuss a possible missing convergence in perception of success for the project at hand - as it so obviously failed on so many levels - we may look at the contextualist theories that may serve as an explanation for the framing of the decision environment during the planning and implementation phase. As stated in the description of the pluralistic view, there is indication that existing concerns regarding feasibility were not developed into grounded opposition or were simply not articulated. The contextualist school offers a variety of theoretical models that may explain the emerge of a dominant narrative that suppressed the emerge of other conflicting or competing narratives (REF). Relevant for the consideration of what happened during the authorization decisions are foremost Boje's antenarrative concept as well as the concept of future perfect strategizing, firstly proposed by (Schütz, 1967), and applied to project contexts by Pitsis et al (2003).

Boje characterizes antenarratives as "prospective (future-looking) bets (antes)" that are "fragile[...], like the butterfly" and are "sometimes able to change the future, to set changes and transformation in motion that have impact on the big picture" (Boje, 2008). A review of media articles during the planning and early construction phase provides evidence for a pronounced and dominant positive antenarrative that went well beyond the directly involved project actors. When, for instance the CEO of the discount airline EasyJet, John Kohlsaas, doubted the profitability of the terminal, it were other airlines that came to the project's defense: "*There is no reason to badmouth the project today.*" (Lufthansa) or "*The planning*

[..] is completed and needs to be realized as quickly as possibly.” (Air Berlin) (dw.com, 2009). Similar evidence of the dominating optimistic narrative can be found in the press communication of Berlin City Hall, quoting Mayor Wowereit in a reaction to EasyJet’s critique, that the airport will *“not be an overdimensioned ‘marble palace’ but neither a ‘Quonset’. The budget needs to be kept.*” (Berlin.de, 2006). This harsh reaction to doubts regarding the necessity of the ‘grandeur’ of the terminal design is in line with expected behaviour when a dominant narrative is faced with a competing marginal narrative.

Future perfect strategizing on the other hand provides conceptual explanation for the creation of the dominant narrative. Especially relevant for our case may be the *Endgaming* strategy (Clegg et al., 2002; Pitsis et al., 2003). Endgaming is a type of leadership that is focused strongly on creating a very clear vision of the “end game” of the project by being very specific about milestones, targets and future achievements. Again the external communication of the project actors during the planning and early construction phase (2006-2009) provides plenty of evidence of *Endgaming*-language:

“The new airport will vault the capital region in a new league. [...] Mayor Wowereit stated, BBI is a guarantee for ten thousands of new jobs” (Berlin.de 2006)

“BBI provides the unique chance to catch up with the global streams of traffic of the global economy” (Matthias Platzeck, Premier of Brandenburg) (FBB, 2009)

“2011 the German capital region will [...] receive a powerful airport with which it may advance into the top 10 of European air traffic locations” (Rainer Schwarz, CEO of BBI) (FBB, 2009)

While the constructive perspective of the contextualist school generally has been focused on the positive aspects of converging framing, we may argue that in the case of Berlin Brandenburg the creation of a powerful optimistic narrative may eventually have contributed to the challenges and subsequent failures in the project.

The three schools provide potential explanations to decision behaviour in the case of authorization decisions regarding internally driven scope changes for the Berlin Brandenburg airport. However, the focus to one explanation model or one school will, ultimately, provide a limited understanding of the case, and not allow us to understand the full picture.

We believe, that there is a likely reinforcement of the effects described in the individual theories when taking a comprehensive view on the decision environment. We propose, for example, that the creation of the dominant positive narrative through pronounced endgaming may have directly impacted the voice behaviour of other actors by creating an environment where open articulation of project risks may have threatened political, economical or career interests of the actor (pluralistic behaviour). Conversely the lack of opposition to the dominating narrative may have served as cement for its position in the sensemaking process of the actors and their future perception of new cues and information.

Also, we may argue that the existence of the vision of the finalized grand airport may have served as an amplifier for cognitive biases like conformity, groupthink, outcome desirability and delusional optimism. Conversely the resulting selective and biased perception of information may have served as a reinforcement of the constructed reality and the forming of individual strategic opinions.

It is likely that an in-depth understanding of these self-enforcing effects, possible feedback loops and dependencies between the descriptive theories would serve as a strong foundation in order to develop strategies and methods to cope with potentially destructive decision behaviour, as observed in the presented case.

Therefore, we propose an integration of the theories and schools rather than an isolated consideration of factors driving decision behaviour. By looking at decision behaviour with an integrated view of the different schools we expect to move forward from the descriptive angle, that is currently dominating in the contextualist and pluralistic school, to a stronger

middle range theorising with implications and guidance to improving decisions in practice. In this regard, Winch (2013) study of the Channel fixed link provides an excellent example of how different theories across the three schools (future perfect strategizing - contextualist), escalation of commitment (reductionist) and strategic misrepresentation (pluralist) not only coexist but also reinforce one another. Therefore, studying behaviours in decisions in projects will require both in-depth understanding of theories within each school as well as integration between these theories. The second gain particular in relevance as we move from contributions to theory to contributions to practice of managing projects.

4. Discussion and Research Agenda

In this section, we build on the conceptual framework proposed above and suggest an agenda for future research based on the intersection between different areas of the framework (see Figure 1). The areas are not meant to be comprehensive nor suggest THE research agenda for the future, instead, they should act as inspiration and invitation to build research in the area.

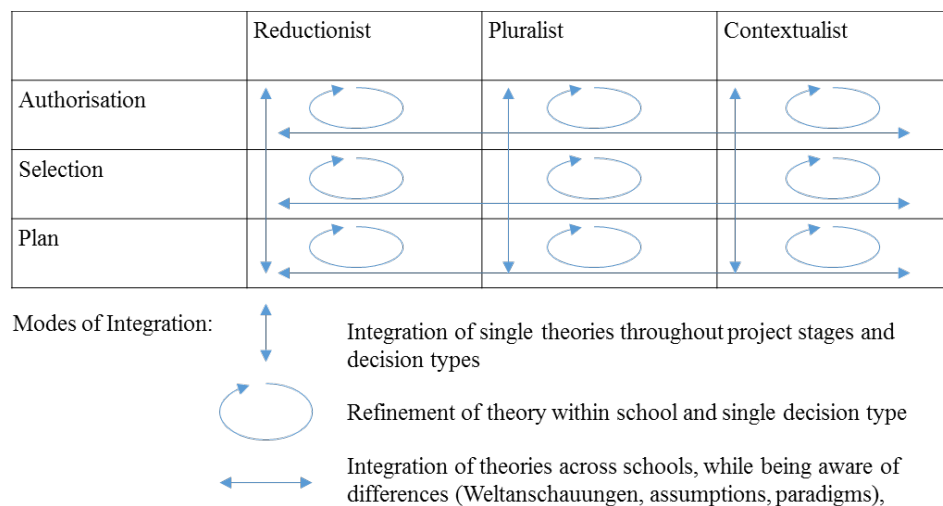


Figure 1: Modes of connecting schools in Behavioural Projects

4.1. Study within each School

While there is an emergent research within the schools and partly even across schools, the literature review and case illustration has identified a series of interesting fields for further research within all of the three schools.

Due to the high attention that cognitive biases have received in the past years in the cognitive and behavioural sciences, there is an abundant source of generic literature and theories that may have significant impact in the project context as well. We found, however, that the reductionist research in the field of project decisions and project management has expressed a very strong focus on the issue of escalation of commitment and over-optimistic forecasts, and various explanation strategies for these phenomena like optimism bias, illusion of control (see Table 2). Clearly, those phenomena are in close relation with the most prominent project fallacies, cost overruns and delays due to ill-designed forecasts or failure in risk management. However, other decision problems and biases are also relevant and insightful. For example, a behaviour well documented in behavioural decision making literature but just - if at all - a side note in the reviewed literature (Kutsch et al., 2011; Sengupta, 2008), is the bias of anchoring (Tversky and Kahneman, 1974) which we expect to be observable to a large extent in the areas of forecasting and for plan decisions in general. For example, pricing indicated in bidding phase or early sanction of projects can impact our understanding of how much the project should cost, and hence lead to a perception of cost overrun, even though the project scope has changed and, consequently, also the budget. Research could explore, for example, to what extent the anchoring affect perception of success and failure and why? How would the anchoring bias be altered if the language used in early phases of the project would be different, e.g. not numbers but probabilities or ranges are provided?

Another promising area of research is the confirmation bias as described by Wason (1960). The related biased search for information and biased interpretation of information to maintain conformity with a prior assumption may provide relevant insight on phenomena like the ignorance of early warning signs or expand the set of explanations for failed project termination.

These are not but two examples. We do expect, that it will be possible to find evidence for other biases in the project context, for instance when it comes to selection of preferred modes of action or technology. Behaviour that we might expect to observe in those cases may be linked to recency bias, dread risks, prospect theory and many other. McCray et al (2002) provides an overview suggesting impact of several other potential biases and heuristics across the different phases of the project, which can inspire further research on biases and heuristics in projects.

Additionally the researched biases were largely related to what we earlier classified as intra-personal cognitive biases, i.e. types of biases that manifest and express in a single person, namely the decision maker or the information provider. The generic literature is however rich in behaviour, that we have called inter-personal biases, i.e. biases that are created through the interaction of individuals. The most prominent of such biases is groupthink (Janis 1982), which has been explored by a few studies in project context, but we would also expect effects from phenomena like conformity bias, Abilene paradox, and others. We may expect that those biases can have significant impact on areas like risk assessment - e.g. through failure to identify new and unknown risks or the reluctance of a single individual in the group to express a deviating assessment of certain risks - but also with regard to the hidden profile bias (Lightle et al., 2008), where the selection is focussed on the things that “everybody knows” rather than discussing those things with heterogeneously distributed knowledge amongst the team members.

Finally, we contend that the research on the reductionist school, both in strategy and in projects, is strongly focused on the negative implications of our limited cognition. The reductionist research in cognitive psychology has started to consider the notion of heuristics as potentially beneficial to decisions in complex and highly uncertain environments (Artinger et al. 2015). As argued by Gigerenzer since the late 90ies. To our knowledge, this positive

spin on heuristics is currently not explored in the project context. Consequently biases are analysed for their "*potential to negatively impact [...] activities [...] in a given project*" (McCray, 2002) and the research focuses on methods to "*offset*" their effect (de-biasing methods). Following the findings of the generic research in cognitive sciences, we would expect, that heuristics, if applied purposefully and ecologically rational have the potential to also positively impact project activities. While there have been findings that the level of experience increases the use of intuition and improvisation in project decisions (Leybourne and Sadler-Smith, 2006), there is limited indication to when does intuition yield 'better' decisions than attempted for 'rational decisions'. If we were to truly accept that projects are uncertain and that evidence provided is incomplete and potentially biased, we need to accept the potential 'accuracy' of intuitive judgments. This area offers interesting research opportunities for the future. It could be studied, for example, what extend the deliberate increased use of intuition would enable better decisions and positively impact project outcomes?

Research could also address the impact of experience in decisions in projects. There has been a significant body of research in behavioural decision making with partly contradicting results with regards to the relationship between experience and 'decision quality'. Project context offers an interesting context for research the impact of experience in decisions, as experience in managing projects is inherently different from experience in other types of activities such as baseball players, who would repeat the same 'situation' uncountable number of times. Project managers, in contrast, will manage only a few projects in their career and hence repeatability is limited. However, there are some decisions which tend to repeat themselves frequently in the course of projects, such as the development of estimations, bidding processes (Davies and Brady 2004), supplier selection, or prioritisation

of workpackages. In such cases, experienced project managers could develop specific successful heuristics and experience could therefore have a positive impact on decisions.

In this line, further studies could build on Eisenhardt's concept of simple rules (e.g. Bingham and Eisenhardt, 2011) and apply it to project contexts - can we build robust simple rules in projects? Do they already exist? What are they? Why do they work? And when?

All of the above are only examples of the research on reductionist schools. Similarly, further studies could explore authorisation, selection and plan decisions in the other two schools. When compared to the reductionist and contextualist school, literature within the pluralistic school is relatively scarce, in particular research that explicitly focuses on decisions, and promotes a pragmatic angle on what could be done and how could one respond to political behaviour in projects. Most of the work is rooted on Flyvbjerg's criticism on forecasters strategically representing future expectations (2013) as well as on the issue of deliberate ignorance as discussed by Kutsch and Hall (2010), or more theoretical discussions on power, and governmentality (Clegg et al., 2002), as well as pragmatic yet general discussions on the importance of political behaviour in projects (Pinto, 1996). However all identified pluralistic literature in decisions is rooted in a strictly descriptive approach - in his work Flyvbjerg explicitly states that his proposed de-biasing framework (2007), to take the outside view and thereby reduce optimism bias, fails in the face of political and self-interest driven behaviour. With Pinto (Accidental profession), we see the phenomenon of opportunistic and strategic behaviour is inherent to projects, and hence, not something that can be eradicated but that must be managed. As there is an argued link between known drivers of opportunistic behaviour, like incentives, personal values, belief-system, contractual frameworks, and others, we propose further exploration how those drivers can be managed in a way that political and opportunistic behaviour may unfold *in* not *against* the interests of the project and organization. As we will argue below, development of a normative pluralistic

theory may also require a stronger integration of findings and theories from both the reductionist and the contextualist school.

For the contextualist school we observed similarly to the pluralistic school a dominant descriptive approach. However, unlike the reductionist school, contextualists focused also on successful practices and projects, and hence provide a often a positive angle to decisions. As such the contextualist described how convergence of frames and sensemaking contributed to project and organizational success (e.g. Pitsis et al 2003) rather than identifying dysfunctional projects where such convergence was missing. We may expect to find evidence for perception of failing projects or “bad” decisions for those projects where there is limited convergence in the framing between different groups with alternative narratives and understandings the project’s ‘reality’ (e.g. Pellegrinelli and Murray-Webster 2011), and potential studies on approaches to improve convergence.

4.2.Integration across different project decisions

Next to a possible closure of gaps between theories in the generic literature and their application within the project context, we also expect further fruitful research opportunities when considering different behavioural theories across different decision types or patterns that influence decisions across the entire project. Mostly, research on the relevance of the theoretical concepts in the project context have been limited to only a single type of decisions, e.g. drivers of optimism bias to either biased forecasts (plan decisions) or failure to terminate (authorization decision). We believe such a research could provide interesting insights as, like we have argued earlier, the three decision types consider aspects of the decision environment in a type-specific way, and search for and process information considerably different. We believe that a comprehensive consideration how the different decision behaviours influence a project from the first plan decisions, throughout selection and authorization decisions, we could deepen the general understanding of contextual factors impacting behaviours in

decisions, as well as the antecedents and consequences of the behaviours. This would enable middle range theorising and contribute to our understanding of behaviours in temporary organizations which can also lead to potential theoretical contribution to the general behaviour decision theory. It has also potential for development of practical guidance for practitioners that span different decisions, and make them aware of behaviours that tend to develop more or less fruitful context for project.

4.3.Integration across schools

As already briefly mentioned when discussing research gaps for the pluralistic school, a rapprochement of the schools may enhance our understanding of the behavioural phenomena at work. A small number of publication has already tried to compare and combine the explanatory power of the different epistemological and ontological angles (e.g. Sanderson, 2012; Haji-Kazemi et al., 2015; Winch, 2013). However, these works have only offered a bouquet of different explanatory theories that are considered individually and less attention has been given to how they interact. Consequently, they do not offer an integrated view on these theories. We argue however, that by consideration of interactions between cognitively limited perception, sensemaking and framing, and the individual system of values and objectives, we may develop a framework that allows us to understand, and in consequence improve decision in line with the understanding of ‘good decisions’ within each of the schools, therewith inform managers and decision makers. This line of research is in line with Powell, Fox and Lovallo’s (2011) call for integration of theories in Behavioural Strategy.

4.4.Integration across the decision types

Another potential area for research is the integration across different decision types. Here we suggest two types of study. First, studies that are inspired by theories used in different types of decisions. For example, how theories that have been successful in explaining behaviour in decision to terminate projects could also be helpful in understanding

evaluation of feasibility of plans, or how integrative approaches such as that proposed by Winch (2013) focusing on the problem of escalation of project's cost and duration can be also useful to explore other typical challenges related to decision in projects, such as the delay in recognising and acting on early warning signs. Such cross-fertilization would, overall, help in the generalisation of research findings beyond the different decision contexts. The second form of integration here could be the integration of different theories within each school to explain behaviour in projects.

4.5. 'Successful' projects and project managers

Moreover, current studies have focused mostly on project failures. While this is interesting to understanding the potential detrimental effects of cognition, politics and sensemaking in projects, we miss to unravel cognition as a source of 'project success'. As argued by Gavetti (2011, p. 267) "Its key insight is that superior opportunities are cognitively distant. They rarely correspond to common ways of thinking. The reason for this is that it is necessary to overcome strong behavioural bounds to pursue these opportunities." Likewise, 'superior' cognition in projects is not only the avoidance of detrimental factors, but potentially something else, e.g. pattern recognition, intuition, etc. Therefore, there is a need to study decisions that were perceived as successful, that were perceived to be fundamental in the building of successful project stories, and decisions of people who are considered as 'great project leaders'.

5. Concluding notes

As we have argued, behavioural projects provide us with a structured and interesting research framework that yet has many unexplored areas. As we have demonstrated using the Berlin Brandenburg case, there is a strong argument for approaching and integrating the three behavioural decision schools to explore decision behaviour in the project context. Such an

integrated approach has a potentially significant impact on both further development of middle range theory and foremost in practice.

This paper was based on an ongoing structured literature review to which we have referenced on several occasions. As the literature review has not yet been finalized there is a limitation regarding the range of literature considered for our claims. The next step will be the finalization of the literature review, which will result in a stronger claim regarding the gaps in the research framework and proposition for future research in the field of behavioural projects.

6. References

- Abgeordnetenhaus Berlin, „Einsetzung eines Untersuchungsausschusses zur Aufklärung der Ursachen, Konsequenzen und Verantwortung für die Kosten- und Terminüberschreitungen des im Bau befindlichen Flughafens Berlin Brandenburg Willy Brandt (BER)“; [https://www.parlament-berlin.de/C1257B55002AD428/vwContentByKey/194B1D50734C976FC1257CAF002CBEA5/\\$FILE/Einsetzungsbeschluss.pdf](https://www.parlament-berlin.de/C1257B55002AD428/vwContentByKey/194B1D50734C976FC1257CAF002CBEA5/$FILE/Einsetzungsbeschluss.pdf); posted on 09-27-2012
- Airliners.de 2010, „Rainer Schwarz bleibt bis 2016 in Berlin“; Airliners.de; <http://www.airliners.de/rainer-schwarz-bleibt-bis-2016-in-berlin/22862>; posted on 12-09-2010
- Artinger, Florian, Malte Petersen, Gerd Gigerenzer, and Jürgen Weibler. 2015. “Heuristics as Adaptive Decision Strategies in Management.” *Journal of Organizational Behaviour* 36: 33–52.
- Bandura, Albert. 1978. “Self-Efficacy: Toward a Unifying Theory of Behavioural Change.” *Advances in Behaviour Research and Therapy* 1 (4): 139–61.
- Bandura, Albert. 1997. *Self-efficacy: The exercise of control*. New York: Freeman

Berlin.de, „BBI: Wowereit beim ersten Spatenstich“;

Berlin.de; <http://www.berlin.de/rbmskzl/rathausaktuell/archiv/2006/09/05/46896/>;
posted on 09-05-2006

Bingham, C. B., & Eisenhardt, K. M. 2011. “Rational heuristics: the “simple rules” that strategists learn from process experience”. *Strategic Management Journal*, 32(13), 1437–1464.

Boje, David. 2008. *Storytelling Organizations*. SAGE, London.

Chapman, Chris, Stephen Ward, and Ian Harwood. 2006. “Minimising the Effects of Dysfunctional Corporate Culture in Estimation and Evaluation Processes: A Constructively Simple Approach.” *International Journal of Project Management* 24 (2): 106–15.

Cicmil, Svetlana, Terry Williams, Janice Thomas, and Damian Hodgson. 2006. “Rethinking Project Management: Researching the Actuality of Projects.” *International Journal of Project Management* 24 (8): 675–86.

Clegg, S. R., T. S. Pitsis, T. Rura-Polley, and M. Marosszeky. 2002. “Governmentality Matters: Designing an Alliance Culture of Inter-Organizational Collaboration for Managing Projects.” *Organization Studies* 23 (3): 317–37.

Cohen, Yuval, Hana Ornoy, Baruch Keren, Benjamin Herazo, Gonzalo Lizarralde, and Raymond Paquin. 2013. “MBTI Personality Types of Project Managers and Their Success: A Field Survey.” *Project Management Journal* 44: 78–87.

Davies, Andrew, and Brady, Tim. 2000. "Organisational capabilities and learning in complex product systems: towards repeatable solutions." *Research Policy* 29 (7): 931-953.

de Camprieux, Renaud, Jacques Desbiens, and Yang Feixue. 2007. ““Cultural’ Differences in Project Risk Perception: An Empirical Comparison of China and Canada.” *International Journal of Project Management* 25 (7): 683–93.

- DPA, „BER-Architekt Gerkan verspottet die Bauherren“; Die Welt; <http://www.welt.de/wirtschaft/article132198764/BER-Architekt-Gerkan-verspottet-die-Bauherren.html>; posted on 09-12-2014
- Dvir, D., & Lechler, T. 2004. “Plans are nothing, changing plans is everything: The impact of changes on project success”. *Research Policy*, 33(1), 1–15.
- DW.com, „Flughafen Berlin: Baubeginn nach 15 Jahren Ärger“; Deutsche Welle; <http://dw.com/p/95C6>; posted on 09-05-2009
- Eisenhardt, Kathleen M, and Mark J Zbaracki. 1992. “Strategic Decision Making.” *Strategic Management Journal* 13 (2): 17–37.
- Ekrot, Bastian, Johannes Rank, and Hans Georg Gemünden. 2015. “Antecedents of Project Managers’ Voice Behaviour: The Moderating Effect of Organization-Based Self-Esteem and Affective Organizational Commitment.” *International Journal of Project Management*, in press.
- FBB, „2,4 Milliarden Euro für den Flughafen – BBI-Finanzierung steht“; Berlin-airport.de; <http://www.berlin-airport.de/de/presse/pressemitteilungen/2009/2009-06-30-bbi-finanzierung/>; posted on 06-30-2009
- Flyvbjerg, Bent. 2008. “Curbing Optimism Bias and Strategic Misrepresentation in Planning: Reference Class Forecasting in Practice.” *European Planning Studies* 16 (1): 3–21.
- Flyvbjerg, Bent. 2013. “Quality Control and Due Diligence in Project Management: Getting Decisions Right by Taking the Outside View.” *International Journal of Project Management* 31 (5): 760–74.
- Flyvbjerg, Bent, Massimo Garbuio, and Dan Lovallo. 2009. “Delusion and Deception in Large Infrastructure Projects: Two Models for Explaining and Preventing Executive Disaster.” *California Management Review* 51 (2): 170–93.

Fuchs, C; Lebert, S; Müller, D, „Die unheimliche Firma“; Zeit Online;

<http://www.zeit.de/2015/29/imtech-flughafen-berlin-ber-verzoegerung>; posted on 07-20-2015

Gavetti, G. 2012. “PERSPECTIVE--Toward a Behavioral Theory of Strategy”. *Organization Science*, 23(1), 267–285.

Geraldi, J. & Arlt, M. 2015. Confident and wrong? Informed decisions through a mindful use of visuals in project portfolio. IRNOP, London, June 2015.

Haji-Kazemi, Sara, Bjørn Andersen, and Ole Jonny Klakegg. 2015. “Barriers against Effective Responses to Early Warning Signs in Projects.” *International Journal of Project Management* 33 (5): 1068–83.

Hammer, J. “How Berlin Airport Became a \$6 Billion Embarrassment: Inside Germany’s profligate (Greek-like!) fiasco called Berlin Brandenburg”. *Bloomberg Business*. Retrieved from <http://www.bloomberg.com/news/features/2015-07-23/how-berlin-s-futuristic-airport-became-a-6-billion-embarrassment>; posted on 07-23-2015

Hartman, Francis. 2008. “Preparing the Mind for Dynamic Management.” *International Journal of Project Management* 26 (3): 258–67.

Jani, Arpan. 2008. “An Experimental Investigation of Factors Influencing Perceived Control over a Failing {IT} Project.” *International Journal of Project Management* 26 (7): 726–32.

Jani, Arpan. 2011. “Escalation of Commitment in Troubled IT Projects: Influence of Project Risk Factors and Self-Efficacy on the Perception of Risk and the Commitment to a Failing Project.” *International Journal of Project Management* 29 (7): 934–45.

Janis, I.L., 1982. *Victims of Groupthink*, 2nd ed. Houghton-Mifflin, Boston

Kahneman, Daniel, and Amos Tversky. 1979. “Prospect Theory: An Analysis of Decision Under Risk.” *Econometrica* 66 (3): 497–527.

- Knudsen, C., 2003. "Pluralism, scientific progress, and the structure of organization theory".
The Oxford Handbook of Organization Theory: Meta-Theoretical Perspectives, Oxford:
Oxford University Press, 262-288.
- Kreiner, Kristian, and Graham M Winch. 2008. "Future Perfect Strategy: The Role of
Imagination and the Risk of Empty Horizons." Managing the Construction of Buildings,
CLiBYG Conference, Copenhagen, 35.
- Krizan, Zlatan, and Paul D Windschitl. 2007. "The Influence of Outcome Desirability on
Optimism." Psychological Bulletin 133 (1): 95–121.
- Kutsch, E, and M Hall. 2005. "Intervening Conditions on the Management of Project Risk:
Dealing with Uncertainty in Information Technology Projects." International Journal of
Project Management 23 (8): 591–99.
doi:<http://dx.doi.org/10.1016/j.ijproman.2005.06.009>.
- Kutsch, Elmar, and Mark Hall. 2010. "Deliberate Ignorance in Project Risk Management."
International Journal of Project Management 28 (3): 245–55.
- Kutsch, Elmar, Harvey Maylor, Birgit Weyer, and Jonathan Lupson. 2011. "Performers,
Trackers, Lemmings and the Lost: Sustained False Optimism in Forecasting Project
Outcomes - Evidence from a Quasi-Experiment." International Journal of Project
Management 29 (8): 1070–81.
- Leybourne, Stephen, and Eugene Sadler-Smith. 2006. "The Role of Intuition and
Improvisation in Project Management." International Journal of Project Management 24
(6): 483–92.
- Lightle, J. P., J. H. Kagel, and H. R. Arkes. 2009. "Information Exchange in Group Decision
Making: The Hidden Profile Problem Reconsidered." Management Science 55 (4): 568–
81.

- Lovullo, Dan, and Daniel Kahneman. 2003. "Delusions of Success: How Optimism Undermines Executives' Decisions." *Harvard Business Review* 81 (7): 56–63.
- McCray, Gordon E, Russell L Purvis, and Coleen G. McCray. 2002. "Project Management under Uncertainty The Impact of Heuristics and Biases.pdf." *Project Management Journal* 33 (1): 49–57.
- Morrison, Elizabeth W. 2011. "Employee Voice Behavior: Integration and Directions for Future Research." *The Academy of Management Annals* 5 (1): 373–412.
- Musca, Geneviève Neukirch, Caroline Mellet, Gilda Simoni, Frédérique Sitri, and Sarah de Vogüé. 2014. "'Drop Your Boat!': The Discursive Co-Construction of Project Renewal. The Case of the Darwin Mountaineering Expedition in Patagonia." *International Journal of Project Management* 32 (7): 1157–69.
- Ojiako, Udechukwu, Maxwell Chipulu, Paul Gardiner, Terry Williams, Caroline Mota, Stuart Maguire, Yongyi Shou, and Teta Stamati. 2014. "Effect of Project Role, Age and Gender Differences on the Formation and Revision of Project Decision Judgements." *International Journal of Project Management* 32 (4): 556–67.
- Pellegrinelli, S., & Murray-Webster, R. 2011. "Multi-paradigmatic perspectives on a business transformation program." *Project Management Journal*, 42(6), 4–19.
- Pinto, Jeffrey. 1996. "Power & politics in project management." *Project Management Institute*.
- Pinto, Jeffrey K, and Peerasit Patanakul. 2015. "When Narcissism Drives Project Champions: A Review and Research Agenda." *International Journal of Project Management* 33 (5): 1180–90.
- Pitsis, Tyrone S., Stewart R. Clegg, Marton Marosszeky, and Thekla Rura-Polley. 2003. "Constructing the Olympic Dream: A Future Perfect Strategy of Project Management." *Organization Science* 14 (5): 574–90

- Powell, Thomas C., Dan Lovallo, and Craig R. Fox. 2011. "Behavioral Strategy." *Strategic Management Journal* 32 (13): 1369–86.
- Powell, T.C., 2011. "Neurostrategy". *Strategic Management Journal*, 32(13):1484-1499.
- RBB, "Die Bauüberwachung war unterbesetzt"; RBB online; https://www.rbb-online.de/politik/Flughafen-BER/BER-Aktuelles/akteure_aktuell/untersuchungsausschuss-vorwuerfe-personalmangel-unzureichende-ueberwachung.html; posted 09-04-2015
- Rolstadås, Asbjørn, Jeffrey K. Pinto, Peter Falster, and Ray Venkataraman. 2015. "Project Decision Chain." *Project Management Journal* 46 (4): 6–19.
- Sanderson, Joe. 2012. "Risk, Uncertainty and Governance in Megaprojects: A Critical Discussion of Alternative Explanations." *International Journal of Project Management* 30 (4): 432–43.
- Schütz, A. 1967. "The Phenomenology of the Social World." Northwestern Press, Evanston, IL.
- Sengupta, K., T. K. Abdel-Hamid, and L. N. Van Wassenhove. 2008. "The Experience Trap." *Harvard Business Review* 86 (2): 94–101.
- Shapira, Z., 2011. "I've got a theory paper—do You?": conceptual, empirical, and theoretical contributions to knowledge in the organization sciences. *Organization Science* 22 (5): 1312–1321.
- Shapira, A, A Laufer, and A J Shenhar. 1994. "Anatomy of Decision Making in Project Planning Teams." *International Journal of Project Management* 12 (3): 172–82.
- Simon, Herbert. 1972. "Theories of Bounded Rationality." *Decision and Organization*.
- Slovic, Paul. 1987. "Perception of Risk." *Science* 236 (4799): 280–85.
- Steyn, Renier, and Johan Mynhardt. 2008. "Factors That Influence the Forming of Self-Evaluation and Self-Efficacy Perceptions." *South African Journal of Psychology* 38 (3): 563.

- Söderlund, Jonas. 2011. "Pluralism in Project Management: Navigating the Crossroads of Specialization and Fragmentation." *International Journal of Management Reviews* 13 (2): 153-176.
- Tullett, Arthur D. 1996. "The Thinking Style of the Managers of Multiple Projects: Implications for Problem Solving When Managing Change." *International Journal of Project Management* 14 (5): 281–87.
- Tversky, A.; Kahneman, D. (1974). "Judgment under Uncertainty: Heuristics and Biases". *Science* 185 (4157): 1124–1131.
- Van Oorschot, K, H Akkermans, Sengupta, and Van Wassenhove. 2013. "Anatomy of a Decision Trap in Complex New Product Development Projects." *Academy of Management Journal* 56 (1): 285–307.
- Wason, P. C. 1960. "On the Failure to Eliminate Hypotheses in a Conceptual Task." *Quarterly Journal of Experimental Psychology* 12 (3): 129–40.
- Weick, K.E. (1995). *Sensemaking in Organizations*. SAGE, London.
- Whytel, Glen, Alan M Saks, and Sterling Hook. 1997. "When Success Breeds Failure: The Role of Self-Efficacy in Escalating Commitment to a Losing Course of Action." *Journal of Organizational Behavior* 18 (5): 415–32.
- Winch, Graham M. 2014. "Three Domains of Project Organising." *International Journal of Project Management* 32 (5): 721–31.
- Winch, Graham M. 2013. "Escalation in Major Projects: Lessons from the Channel Fixed Link." *International Journal of Project Management* 31 (5): 724–34.
- Windschitl, Paul D., Aaron M. Scherer, Andrew R. Smith, and Jason P. Rose. 2013. "Why so Confident? The Influence of Outcome Desirability on Selective Exposure and Likelihood Judgment." *Organizational Behavior and Human Decision Processes* 120 (1). Elsevier Inc.: 73–86.